Pope, C.A. "Respiratory Disease Associated with Community Air Pollution and a Steel Mill, Utah Valley" AJPH 79(5): 623-628, 1989.

ABSTRACT: This study assessed the association between hospital admissions and fine particulate pollution (PM_{10}) in Utah Valley during the period April 1985-February 1988. This time period included the closure and reopening of local steel mill, the primary source of PM_{10}. An association between elevated PM_{10} levels and hospital admissions for pneumonia, pleurisy, bronchitis, and asthma was observed. During months when 24-hour PM_{10} levels exceeded 150 $\mu g/m^3$, average admissions for children nearly tripled; in adults, the increase in admissions was 44 per cent. During months with mean PM_{10} levels greater than or equal to 50 $\mu g/m^3$ average admissions for children and adults increased by 89 and 47 per cent, respectively. During the winter months when the steel mill was open, PM_{10} levels were nearly double the levels experienced during the winter months when the mill was closed. This occurred even though relatively stagnant air was experienced during the winter the mill was closed. Children's admissions were two to three times higher during the winters when the mill was open compared to when it was closed. Regression analysis also revealed that PM_{10} levels were strongly correlated with hospital admissions. They were more strongly correlated with children's admissions than with adult admissions and were more strongly correlated with admissions for bronchitis and asthma than with admissions for pneumonia and pleurisy.

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